

IN THE CLAIMS

1. (previously presented) A composition for absorbing hydrogen, comprising:

a mixture of a polyphenyl ether and a hydrogenation catalyst, wherein the polyphenyl ether is comprised of at least 3 basic structural units and said composition is capable of absorbing hydrogen at a pressure of less than about 1 atmosphere.

2. (original) The composition of claim 1, wherein the polyphenyl ether is comprised of 4 to 7 basic structural units.

3. (original) The composition of claim 1, wherein the hydrogenation catalyst is a precious metal or a metallic salt thereof.

4. (original) The composition of claim 3, wherein the hydrogenation catalyst is Pt.

5. (original) The composition of claim 4, wherein the hydrogenation catalyst is present at a concentration of from about 0.5 to 5 wt%.

6. (original) The composition of claim 1, wherein the hydrogenation catalyst is supported on a porous solid.

7. (original) The composition of claim 6, wherein the porous solid is activated carbon, aluminum oxide, or barium carbonate, or combinations thereof.

8. (currently amended) The composition of claim ~~4~~ 6, wherein the concentration of supported hydrogenation catalyst is from about 5-50 wt% of the supported catalyst containing about 1-10 wt% metal.

9. (original) The composition of claim 1, further including a binder or filler.

10. (original) The composition of claim 9, wherein the binder or filler is an inert polymer, a thixotropic agent, a mineral, a carbon powder, or finely divided silica.

11. (original) The composition of claim 10, wherein the binder or filler is present at a concentration of from about 20-70 wt%.

12. (new) A method for absorbing hydrogen, comprising:

providing a composition capable of absorbing hydrogen, wherein the composition comprises a mixture of a polyphenyl ether having at least three basic structural units and a hydrogenation catalyst, and wherein the composition is capable of absorbing hydrogen at a pressure of less than about 1 atmosphere.

13. (new) The method of claim 12, wherein the polyphenyl ether is comprised of 4 to 7 basic structural units.

14. (new) The method of claim 12, wherein the hydrogenation catalyst is a precious metal or a metallic salt thereof.

15. (new) The method of claim 14, wherein the hydrogenation catalyst is Pt.

16. (new) The method of claim 14, wherein the hydrogenation catalyst is present at a concentration of from about 0.5 to 5 wt%.

17. (new) The method of claim 12, wherein the hydrogenation catalyst is supported on a porous solid.

18. (new) The method of claim 17, wherein the porous solid is activated carbon, aluminum oxide, or barium carbonate, or combinations thereof.

19. (new) The method of claim 17, wherein the concentration of supported hydrogenation catalyst is from about 5-50 wt% of the supported catalyst containing about 1-10 wt% metal.

20. (new) The method of claim 12, further including a binder or filler.
21. (new) The method of claim 20, wherein the binder or filler is an inert polymer, a thixotropic agent, a mineral, a carbon powder, or finely divided silica.
22. (new) The method of claim 20, wherein the binder or filler is present at a concentration of from about 20-70 wt%.
23. (new) A composition for absorbing hydrogen from hydrogen/oxygen mixtures, comprising:
- a mixture of a polyphenyl ether and a hydrogenation catalyst, wherein the polyphenyl ether is comprised of at least 3 basic structural units.
24. (new) The composition of claim 23, wherein the polyphenyl ether is comprised of 4 to 7 basic structural units.
25. (new) The composition of claim 23, wherein the hydrogenation catalyst is a precious metal or a metallic salt thereof.
26. (new) The composition of claim 25, wherein the hydrogenation catalyst is Pt.
27. (new) The composition of claim 26, wherein the hydrogenation catalyst is present at a concentration of from about 0.5 to 5 wt%.
28. (new) The composition of claim 23, wherein the hydrogenation catalyst is supported on a porous solid.
29. (new) The composition of claim 28, wherein the porous solid is activated carbon, aluminum oxide, or barium carbonate, or combinations thereof.
30. (new) The composition of claim 28, wherein the concentration of supported hydrogenation catalyst is from about 5-50 wt% of the

supported catalyst containing about 1-10 wt% metal.

31. (new) The composition of claim 23, further including a binder or filler.

32. (new) The composition of claim 31, wherein the binder or filler is an inert polymer, a thixotropic agent, a mineral, a carbon powder, or finely divided silica.

33. (new) The composition of claim 31, wherein the binder or filler is present at a concentration of from about 20-70 wt%.